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July 20, 2001

The Honorable Harry Reid
United States Senate
SH-528 Hart Senate Office Bldg.
Washington, D.C. 20510-2803

Dear Senator Reid:

This letter responds to a request by your staff for information about the status of efforts to address the presence of perchlorate in the area of the Las Vegas Wash and in Lake Mead. It is my understanding that you may be considering appropriation of funds to assist in the ongoing effort to limit the quantity of perchlorate reaching Lake Mead and potentially affecting drinking water supplies.

Background

Sampling of Lake Mead in 1997 detected very low levels (parts per billion) of perchlorate, a highly soluble constituent of a salt, ammonium perchlorate, long manufactured as a principal ingredient in rocket fuel used for national defense and space purposes. Beginning in the early 1950s, ammonium perchlorate has been manufactured at the BMI Industrial Complex in Henderson, Nevada, approximately 3.5 miles to the south of the Las Vegas Wash. Initial manufacture of this compound took place at a plant built and owned by the U.S. Navy. The U.S. sold this plant in 1962 to the American Potash and Chemical Corporation, which was subsequently acquired by Kerr-McGee Chemical Corporation in 1967. A second plant for production of ammonium perchlorate began operations 1.5 miles to the west of the BMI complex in the 1960s, under the ownership of Pacific Engineering and Production Company of Nevada (Pepcon). Since these two plants represented most of the nation's productive capacity for ammonium perchlorate, it appeared probable that the sites were the source of perchlorate detected in Lake Mead.

Accordingly, the Nevada Division of Environmental Protection approached the owners of these plants to secure cooperation and expedited study of possible perchlorate contamination in groundwater that could be reaching the Las Vegas Wash and Lake Mead. Studies undertaken by Kerr-McGee confirmed that a plume of perchlorate

extended from its industrial site to the Las Vegas Wash. Studies by Pepcon indicate the presence of perchlorate in groundwater beneath and downgradient of its site, but these studies have not yet revealed that Pepcon's perchlorate is reaching the Las Vegas Wash.

Kerr-McGee and NDEP have cooperated in framing appropriate response measures, as more fully described below.

Potential Human Health Effects of Perchlorate

Historically, perchlorate, which acts upon the thyroid gland, has been used medicinally for thyroid problems. Its potential human health effects in low doses in drinking water are not well understood. The State of California, in cooperation with the U.S. Environmental Protection Agency, has applied a "provisional standard" of 18 ppb of perchlorate in drinking water sources. A Science Advisory Panel to EPA has considered recommending adoption of a drinking water standard of 32 ppb. Others have urged setting a precautionary standard as low as the limit of detection of 4 ppb. Some scientists have expressed concern that perchlorate may cause learning deficits.

During the past four years, several epidemiological studies of potential thyroid health effects have been carried out in the Southwestern United States and in Chile. The most relevant of these studied newborns and school children in a city with 110 ppb perchlorate in the drinking water and found no adverse thyroid effects when compared to a nearby city without perchlorate in its drinking water supplies. It is our understanding that the Environmental Protection Agency plans to establish a maximum contaminant level (MCL) under the Safe Drinking Water Act for perchlorate, but the schedule for this action is not definite.

Response Actions by Kerr-McGee

Kerr-McGee conducted an extensive two-phase groundwater investigation to characterize and delimit the plume of perchlorate extending from the Kerr-McGee facility at Henderson to the Las Vegas Wash. In the spring of 1999, an actual spring or seep adjacent to the Wash was discovered, waters of which contained elevated levels of perchlorate. Pursuant to a consent agreement between NDEP and Kerr-McGee in July 1999, the Company installed a collection system to capture this seep, which flows in a range between 300-400 gallons per minute, and to treat this water using a temporary ion exchange removal system. Kerr-McGee also installed a large (11 acre) lined surface impoundment on its plant site and pumped into this impoundment groundwater extracted within its property boundary, containing elevated levels of perchlorate.

Under this July 1999 consent agreement with NDEP, Kerr-McGee has been continuing the environmental investigation and has been identifying and designing an appropriate long-term treatment system for a larger volume of perchlorate-containing

ground and surface waters. Kerr-McGee and NDEP are in final negotiation of a consent agreement to govern the operation of such a system, and we expect that Kerr-McGee will begin operation of a 825 gallon per minute plant by the end of this year.

Kerr-McGee has advised us that, to date, it has expended approximately $17 million to address this perchlorate situation, and it anticipates spending an additional $20 million or more with respect to the construction and operation of the proposed 825 gallon per minute plant. Additionally, NDEP, after consultation with the EPA, has advised Kerr-McGee that it may be required to continue operation of its temporary removal system for at least six months, and possibly longer, to ensure maximum capture of perchlorate in groundwater that its adjacent to the Las Vegas Wash. Kerr-McGee advises us that the cost of operating this temporary system is on the order of $350,00-$400,000 per month. Thus, it appears that the costs of perchlorate remediation will be at least $40 to $50 million dollars, a significant share of which has already been undertaken by Kerr-McGee.

Role of the United States

As previously noted, the ammonium perchlorate production facility at Kerr-McGee's Henderson plant was originally owned and constructed by the United States Navy. In January 1999, Kerr-McGee wrote to the Secretary of the Navy and requested that the Navy participate in discussions as to how best to address the situation of historic contamination by perchlorate. In the summer of 1999, the Navy advised that it was referring the matter to the U.S. Army Corps of Engineers to determine whether the site would be eligible under the cleanup program for formerly utilized defense sites (FUDS). No further response was forthcoming from the Corps of Engineers or the Navy, and, in the summer of 2000, it is our understanding that Kerr-McGee initiated a lawsuit against the United States seeking contribution for the response costs that it was incurring. Kerr-McGee and the U.S. Department of Justice have been discussing possible settlement of this claim, but, reportedly, progress has been slow and the United States has yet to indicate a willingness to bear any significant fraction of the cost of addressing this perchlorate situation.

The U.S. Environmental Protection Agency has been taking a close interest in the situation. Representatives of the EPA Region travel frequently to Henderson to review the ongoing response efforts. Also, EPA has repeatedly stated a willingness to issue federal cleanup orders if the Agency determines that insufficient progress has taken place under consent agreements between NDEP and Kerr-McGee. Kerr-McGee has responded that it has already undertaken costly response measures and that, if EPA wants further action, it would be appropriate for EPA to address its concerns to its sister agency, the Department of Defense, given the evident historical role of the United States in the production of ammonium perchlorate at Henderson.

Conclusion

I hope that the foregoing information is responsive to your needs. Although the actual risks posed by perchlorate are not fully understood, limiting perchlorate in drinking water supplies remains a serious concern to NDEP. Given the significant historical role of the United States in the production of perchlorate at Henderson, and given the consumption of this product by U.S. agencies and their contractors for important national defense and space exploration purposes, the NDEP would welcome participation or financial contribution by the federal agencies that contributed to this problem.

Sincerely,

Allen Biaggi
Administrator

AB:HLR:db

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